

I claim:

1. A method for modifying memory on at least one control device, from a remote host device, without interrupting the operation of the control device, wherein the control device and the host device are coupled through a Fieldbus communications network, the method comprising:

transferring data from the host device to the control device during unscheduled communications periods;

storing the transferred data to an inactive memory area; and,

redirecting at least one control instrument microprocessor, during a microprocessor idle period, to execute the stored data in the inactive memory area.

2. A method according to claim 1, further comprising verifying the stored data in the inactive memory areas.

3. A method according to claim 1, wherein redirecting the microprocessor further comprises providing the microprocessor with entry points to the stored data.

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4. A method according to claim 1, wherein transferring data further comprises transmitting entry points.

5. A method according to claim 1, wherein transferring data further comprises transmitting executable instructions.

6. A method according to claim 1, wherein transferring data further comprises synchronizing data transmissions between the host device and the control devices to avoid interference with scheduled communications.

7. A method according to claim 1, further comprising:

selecting at least one active memory area; and,

inactivating the selected active memory area such that the microprocessor does not execute data in the selected active memory area.

8. A method according to claim 1, wherein redirecting the microprocessor further comprises issuing an upgrade request from the host device to the control devices.

9. A method according to claim 8, wherein issuing an upgrade request further comprises coordinating at least one upgrade command from the host device to at least one control device.

10 A method according to claim 1, wherein redirecting the microprocessor further comprises:

monitoring at least one parameter; and,

communicating a command to redirect the microprocessor when the parameter attains a specified value.

11. A system for modifying memory on at least one control device, from a remote host device, without interrupting the operation of the control device, wherein the control device and the host device are coupled through a Fieldbus communications network, the system comprising:

at least one control device, the control devices further comprising at least one active memory area and at least one inactive memory area;

at least one control device microprocessor to execute instructions and data in the active memory areas; and,

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a control device selector module to direct the microprocessor to at least one active memory area, the selector module further comprising a scheduling module to redirect the microprocessor during microprocessor idle periods.

12. A system according to claim 11, wherein the selector module further comprises entry points to direct the microprocessor.

13. A system according to claim 11, wherein the microprocessor further comprises a memory verification module.

14. A system according to claim 11, wherein:

the active memory area comprises flash memory; and,

the inactive memory area comprises flash memory.

15. A system according to claim 11, wherein the host device further comprises:

a Fieldbus communications module to access the Fieldbus communications network;

a control module to receive, transmit, and display commands and data between the Fieldbus communications network and a host device user; and,

a control device communications module to transmit and receive commands and data between the host device and the control device.

16. A system according to claim 15, wherein the control module further comprises a user interface.

17. A system according to claim 11, wherein the host device is a microprocessor-based device.

18. A system according to claim 11, wherein:

the active memory data comprises executable instructions and data; and,

the inactive memory data comprises executable instructions and data.